

Abstract

A turbocharger includes a cylindrical wall and a non-ferromagnetic compressor wheel within the cylindrical wall. The non-ferromagnetic compressor wheel has fins. A magnetoresistive sensor housing is threaded through the cylindrical wall and houses a permanent magnet and at least one magnetoresistor. The permanent magnet is positioned so as to induce eddy currents on the fins. The permanent magnet magnetically biases the magnetoresistor, and the magnetoresistor senses rotation of the non-ferromagnetic compressor wheel.